## (12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

# (19) World Intellectual Property Organization

International Bureau



(43) International publication date

2 August 2004 (12.08.2004)

### PCT

#### (10) International publication number

WO 2004/067745 A1

(51) International patent classification<sup>7</sup>:

C12N 15/62 (81)

(21) International application number:

PCT/FR2004/000073

(22) International filing date:

15 January 2004 (15.01.2004)

(25) Language of filing:

03/00,422

French

(26) Language of publication:

French

(30) Data relating to the priority:

15 January 2003 (15.01.2003) I

- (71) Applicant (for all designated States except US): MILLEGEN [FR/FR]; Rue Pierre et Marie Curie, F-31670 Labege (FR).
- (71) Applicants (US only): INSERM [FR/FR]; 101, rue de Tolbiac, F-75654 Paris Cedex 13 (FR). UNIVERSITE PAUL SABATIER [FR/FR]; 118, route de Narbonne, F-31062 Toulouse (FR).
- (72) Inventors; and
- (75) Inventors/Applicants (US only): BOUTONNET, Christel [FR/FR]; 2, rue de la Piscine, F-81000 Albi (FR). VAGNER, Stephan [FR/FR]; Lieu-dit Les Tailladettes, F-31810 Clermont Le Fort (FR). FAYE, Jean-Charles [FR/FR]; La Merre, F-31310 Montesquieu-Volvestre (FR). FAVRE, Gilles [FR/FR]; 61bis, chemin de Villenouvelle, F-31270 Cugnaux (FR). KHARRAT, Abdelhakim [FR/FR]; 69, chemin AI Cers, F-31450 Montgiscard (FR). BOUAYADI, Khalil [MA/FR]; 10, allées Philippe Aries, F-31400 Toulouse (FR).
- (74) Representatives: VERCAEMER, Laurence. etc.; Cabinet Plasseraud, 65/67, rue de la Victoire, F-75440 Paris Cedex 9 (FR).

- Designated states (unless otherwise indicated. for every kind of national protection available): AE. AG, AL, AM. AT, AU, AZ, BA. BB, BG, BR, BW, BY, BZ, CA, CH. CN, CO. CR. CU, CZ, DE. DK. DM. DZ, EC, EE, EG, ES, Fl. GB, GD, GE, GH, GM, HR. HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG, PH, PL, PT, RO. RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.
- (84) Designated states (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

#### Declaration under Rule 4.17:

- Of inventorship (Rule 4.17(iv)) for the following designation US.

#### Published:

- With International Search Report.
- Before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments.

For an explanation of the two-letter codes and the other abbreviations, reference is made to the explanations ("Guidance Notes on Codes and Abbreviations") at the beginning of each regular edition of the PCT Gazette.

#### As printed

(54) Title: GENE EXPRESSION INDUCING FUSION PROTEIN AND METHOD FOR CONTROLLING GENE EXPRESSION INDUCTION

(54) Time: PROTEINE DE FUSION INDUCTRICE DE L'EXPRESSION D'UN GENE ET PROCEDE DE CONTROLE DE L'IN-DUCTION DE L'EXPRESSION D'UN GENE

(57) Abstract: The invention relates to a gene expression inducing fusion protein comprising a) a ribonucleic acid linking peptide domain and a post-transcriptional gene expression activator domain and b) a domain enabling cytoplasmic membrane delocalization. The invention also relates to a modulatable permanent external method for controlling gene expression induction by modulating the state of post-translational modulation of the gene expression inducing fusion protein for the expression of said gene.

(57) Abrégé: L'invention a pour objet une protéine de fusion inductrice de l'expression d'un gène comprenant, d'une part, un domaine peptidique de l'aiston aux acides ribonucléiques et un domaine activateur de l'expression post-transcriptionnelle du gène, et, d'autre part, un domaine permettant une délocalisation à la membrane eytoplasmique. L'invention a également pour objet un procédé de contrôle externe permanent et modulable de l'induction de l'expression d'un gène par modulation de l'état de modification post-traductionnelle de la protéine de fusion inductrice de l'expression dudit gène.